

# **Report of the Committee of Management and Medical Director : 1944 / Papworth Village Settlement.**

## **Contributors**

Papworth Village Settlement (Cambridge, England)  
Papworth Hall Tuberculosis Colony (Cambridge, England)

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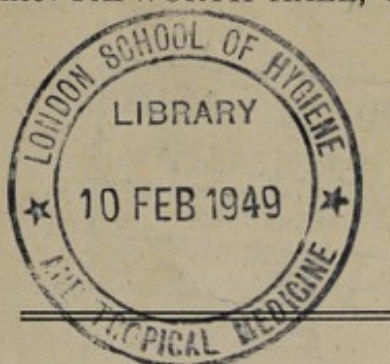
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# THE PAPWORTH VILLAGE SETTLEMENT

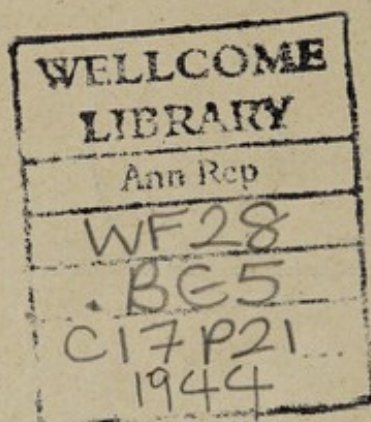
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## REPORT OF THE COMMITTEE OF MANAGEMENT AND HONORARY MEDICAL DIRECTOR FOR 1944

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PRESENTED AT THE TWENTY-EIGHTH ANNUAL GENERAL  
MEETING OF THE SETTLEMENT, DECEMBER 12TH, 1945



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# PAPWORTH VILLAGE SETTLEMENT

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## REPORT OF THE COMMITTEE OF MANAGEMENT FOR THE YEAR 1944

THE Committee are glad to report that during the year 1944 there has been no falling off in the work of the Settlement in its endeavours to provide a comprehensive scheme for the treatment of the tuberculous. The number of patients in residence has remained at a high level; the admissions of patients for treatment have exceeded those of previous years, and still greater advantage has been taken during the year of the specialized treatment provided by the Nelson-Langermann Surgical Hospital. Despite these increases, however, our waiting lists are as long as ever.

The Settlement has continued to provide satisfactory employment both in the Industries and in the Institution for patients of both sexes, and in this respect the Committee has to report an increasing demand for the rehabilitation of nurses who have been struck down with tuberculosis, the Queen Mary House having been fully occupied throughout the year.

The new X-ray department in the Bernhard Baron Hospital for men was completed during the year, and has already proved of inestimable value to our medical staff. Its equipment has been increased by the loan of a portable ward unit by the British Red Cross Society, to whom the Committee are most grateful, not only for this loan, but for the help so freely given to our patients from the Services.

Two pairs of houses have been completed and occupied during the year; a small but very welcome contribution to our housing problem.

Other work completed or in progress includes the extension to the Sims Woodhead Memorial Laboratory and the provision of a tarmac road to serve the Bernhard Baron Hospital and the Nelson-Langermann Hospital.

The Committee now contemplate, on the recommendation of the Medical Consultative Committee, the complete re-building of the South Park Sanatorium for men to replace the open-air chalets. This is now an urgent need, as most of the chalets were constructed as far back as 1919.

The water mains installed by the Settlement in 1928 from Bourn Reservoir to the village were formally transferred to the Chesterton Rural District Council, following the formation of the new Joint Water Board, the agreement originally made with the East Hunts. Water Co. having expired.

The agreements with the Hunts and Cambs. County Councils for the reservation of beds at Papworth also expired during the year, and negotiations are now in progress for a continuance of the service which Papworth renders to these two counties in the treatment of tuberculosis.

The Committee agreed to adopt the Hetherington Report in respect of domestic workers in hospitals, and were glad to note that as a result very little revision was needed in the wage scales already in force at Papworth. It was hoped that the adoption of the Report would bring about some amelioration of the staff shortage, but this has not proved to be the case and there would

appear to be little prospect of any early improvement. Highly qualified nursing sisters are still obliged to take the place of cooks when the latter take their much needed holidays.

Among other matters in which the Committee have been glad to be concerned has been the commissioning of a portrait of Miss Borne, by Mr. Moynihan, part of the cost of which was borne by Papworth patients and settlers, both past and present. The portrait which henceforth occupies an honoured position at Papworth Hall, at the present time is on exhibition at Burlington House.

The Committee were also pleased to sanction the production of a film of Papworth, sponsored by the British Council, for exhibition abroad.

In October, Sir Reginald Wingate signified to the Committee his wish to retire from the post of Chairman of the Settlement, which he had accepted as a temporary measure, following the sudden death of the Marquess of Willingdon. His resignation was received with very great regret, but the Committee are happy to say that through his good offices the Marquess of Linlithgow has consented to accept nomination and has since been elected Chairman.

It is with deep regret that the Committee record the death of Sir Humphry Rolleston, Bt., President of the Settlement from 1925 to 1934, and Lady Rolleston has now been obliged to relinquish her membership of the Committee of Management, of which she has been a most valuable member since her election in 1926.

The Committee is also glad to announce that the Earl of Sandwich and Capt. R. G. Briscoe, M.P., the Lords Lieutenants respectively of

Huntingdon and Cambridgeshire, have kindly consented to become Vice-Presidents of the Settlement, and in addition Capt. Briscoe has become a Member, and has been elected to the Committee.

The work of the Hospital Guild throughout the year has been most helpful, and the Committee are deeply indebted to Mrs. Shore and her Committee and to members of the Guild for their unfailing interest in our work.

The Medical Consultative Committee has continued to be of the greatest assistance to the Committee, as also has been the work of the Medical Research Board, under the Chairmanship of Sir Arthur MacNalty.

The Honorary Staff, which during the year has been strengthened by the appointment of Dr. C. H. Whittle, as Hon. Dermatologist, and Mr. Oswald Lloyd as Hon. Gynaecologist, has been at all times available to our medical staff for advice and help, and the Committee are most grateful to them for their interest and assistance.

To our donors and subscribers to the general funds, the Committee are deeply indebted for their continued generosity despite heavy taxation and the many war-time calls; their help is greatly needed, for after five years of war, there is much to be done if Papworth is to hold its own in the field of tuberculosis work.

In conclusion the Committee would like to express their thanks to the Hon. Medical Director, Air Commodore R. R. Trail, for his untiring efforts in the cause of Papworth, and to all the staff at Papworth, who, by their devotion to duty, have shown that they have the interests of Papworth at heart.

J. E. BIDWELL,  
Chairman.

# REPORT OF THE HON. MEDICAL DIRECTOR FOR THE YEAR 1944.

I HAVE the honour to present the Annual Report for the year ended 31st December, 1944. A study of the figures of admission and discharge will show how the work has grown during the most difficult of all the war years, when staff, medical and nursing, has been well below the minimum for efficiency for our present number of beds.

I would in particular call attention to the steady increase in surgical treatment. In 1942-43 the total of operations performed was 227 ; this was six above the four years' total for the four pre-war years 1936—1939, when Papworth had adequate resident staff and could expect much more from its visiting staff. Nevertheless the work has increased still further ; the total of operations for the period under review is 382. This is clear proof of the importance of collapse therapy in the rehabilitation of the tuberculous.

Artificial pneumothorax and its ancillary treatments of adhesion section and phrenic paralysis have changed the outlook for large numbers of the tuberculous. There are unfortunately many patients who cannot attain arrest of the disease by these simpler forms of collapse treatment. They require the varied operations of thoracoplasty. Their selection demands great care and their individual treatment a skill which is yet in the

hands of but few surgeons. Nevertheless, already the after-histories of sanatorium-treated patients from institutions properly equipped for such modern methods of therapy have shown the enormous benefits they confer on the individual and on the national economy. Survival rates five years after discharge are now showing something near a twenty per cent. improvement.

Papworth has now had the Nelson-Langermann Surgical Hospital in operation for nine years. It has produced excellent results with limited accommodation. It will certainly be called on more and more in the immediate future. Papworth is excellently situated as a collecting point for all patients requiring every form of chest surgery from thoracotomy to lobectomy. It is near a University which has a post-graduate scheme in view for the training of medical and surgical registrars in chest disease. We must be ready to take these opportunities, and it is therefore my earnest hope that the schemes of extension now under review by the Medical Consultative Committee will meet with the sympathy and support of the Committee of Management, so that we can look forward to the early provision of an increased number of beds and the necessary extra theatre accommodation in the near future.

## I. GENERAL MEDICAL STATISTICS

	Men.	Women.	Total.
Admissions ... ..	342	179	521
Discharges ... ..	342	175	517
Average number of beds occupied during the year ... ..	354	158	512
Total number treated...	692	341	1,033
Service patients treated	143	8	151
Number of patients colonized ... ..	24	17	41

## II. SURGICAL UNIT

### The Nelson-Langermann Hospital

*J.B. Hunter, M.C. M.Ch, F.R.C.S., Hon. Thoracic Surgeon.  
F.L. Wollaston, M.R.C.S., L.R.C.P., Resident Surgical Officer.  
H.N. Webber, M.R.C.S., L.R.C.P., D.A., Hon. Anaesthetist.*

During the past three years there has been a great increase in the number of patients admitted for treatment. This has been due to two causes: (1) the number of pensioners that have been admitted direct, and (2) the increased use that is now being made of Collapse Therapy in all its forms in the treatment of tuberculosis. There has been an increase of 60% of Collapse Therapy treatment, and this has tended to centre round the surgical unit. Every patient on admission is considered by the whole medical staff, including the resident surgical officer, and if a decision is taken that a case is suitable for Collapse Therapy such cases are under the direction of the surgical side, the policy being to obtain effective collapse by the full employment of all available surgical methods.

If pneumothorax is ordered the case is reviewed three weeks after induction, and unless the pocket is too small to admit a thoracoscope, or alternatively, collapse is completely efficient and no adhesions can be seen, a routine thoracoscopy is performed. By this means selective collapse has been obtained in 68% of cases in which A.P. was induced, and in many cases of ineffective collapse adhesions have been found that did not show on X-ray. When selective collapse has been obtained the patient is kept in bed until the X-ray does not demonstrate a cavity and the sputum is negative, whereupon the patient follows normal sanatorium routine, though throughout his stay in

Papworth routine X-rays are taken and seen by the surgical officer. If the collapse cannot be made selective or the cavity does not close and the sputum become negative, the case is again reviewed and submitted to the Consulting Physician and Consulting Surgeon.

If phrenic paralysis is considered to be the treatment of election a phrenic crush is performed. The patient is kept in bed for a period of from one to three months and reviewed at monthly intervals. If the result is satisfactory the crush may be repeated when a flicker begins to appear in the diaphragm on screening, but if it is not fully effective as indicated clinically, radiologically or bacteriologically, other Collapse Therapy is considered.

If other methods of Collapse Therapy have failed, the case is submitted to the Consulting Surgeon with a view to more extensive therapy, such as thoracoplasty. A period of bed rest and observation is regarded as essential preliminary to thoracoplasty, and sometimes a course of gold is given. In others a contralateral pneumothorax is induced where there is a suspicious focus in the "good" lung. Patients are transferred to the Surgical Unit for a period before the operation so that they become used to the surroundings and staff. As there is no waiting list, patients can be operated upon at the optimum time when resistance is considered to be at its peak. After operation they are kept in bed for a minimum period of three months, and then transferred to the Sanatorium Blocks.

As the aim of treatment is to secure effective collapse it often happens that a patient is treated by several successive procedures, starting with an attempted pneumothorax, a phrenic crush and then thoracoplasty. In certain cases where pneumothorax has failed and it is not considered advisable to proceed straight away to thoracoplasty, a phrenic crush is undertaken together with a pneumoperitoneum.

The results of treatment of all cases who have undergone any form of collapse therapy during 1944 are submitted. 73% were discharged from the treatment unit with negative sputum. Assessment was made on discharge or transfer to rehabilitation section, or, in unsuccessful cases, at a period of not less than six months after the completion of surgical treatment.

In addition to the surgical treatment of Papworth patients the Unit has admitted

patients from other Institutions for surgical treatment, the patients being transferred back on completion of treatment. Patients have been admitted from the L.C.C. (Grosvenor and Holy Cross Sanatoria and Winchmore Hill Hospital), Herts. C.C. (Ware Park Sanatorium), Portsmouth C.C. (Royal National Hospital), Bedford C.C. (Moggerhanger Sanatorium), West Suffolk C.C. (White Lodge Hospital), etc. A total of 93 patients were admitted during the year, 89 for adhesion section, 11 for phrenic paralysis either additional to or in place of pneumothorax, and one for induction of pneumothorax.

Patients treated by collapse therapy			
(1944) ... ..	181		
T.B. negative ... ..	131		
T.B. positive on culture ... ..	13		
" " on direct smear ... ..	37		
Patients whose surgical treatment commenced 1943, and were completed 1944 ... ..			
(Phrenic paralysis 2, adhesion section 3, thoracoplasty 4.)	9		
Operations performed :—382			
Thoracoplasty (operations) ... ..	94		
Phrenic paralysis ... ..	89		
Thoracoscopy only ... ..	7		
" and adhesion section ... ..	171		
Thoracotomy and adhesion section ... ..	4		
Bronchoscopy ... ..	4		
Exploratory thoracotomy ... ..	1		
Non-pulmonary operations ... ..	12		

### Phrenic paralysis.

Twenty-eight patients were treated by phrenic paralysis as the treatment of choice. Two of these also had a pneumo-peritoneum. In 20 patients the treatment was successful and the sputum negative. In five persistent positive cases no other form of collapse therapy was considered indicated, in two cases a pneumothorax was induced and in a third case pneumothorax failed. No case was suitable for thoracoplasty.

Twenty-three patients had phrenic paralysis following failure of pneumothorax or contra-selective pneumothorax. Treatment was successful (sputum negative) in eleven cases.

Phrenic paralysis was also used following abandonment of old-established pneumothorax (ten cases), to supplement collapse in maintained pneumothorax (fifteen cases), and to treat a recent basal cavity in an old thoracoplasty case.

### Artificial pneumothorax.

Pneumothorax was attempted in 109 cases.

Completely adherent pleura ... ..	24
Small free pocket only ... ..	14
Abandoned after thoracoscopy ... ..	13
Pneumothorax maintained ... ..	58

An additional 18 patients were admitted with a pneumothorax, all of whom required adhesion section.

Thoracoscopy was performed as a routine in all cases three to four weeks after induction of pneumothorax. In eight cases pneumothorax was effective without thoracoscopy, and in 68 cases adhesion section produced effective and selective collapse. Pneumothorax was abandoned in eleven cases in which adhesion section was impossible or insufficient to produce selective collapse, and in two cases of selective collapse following rapid extension of contralateral disease. Phrenic paralysis was performed to supplement relaxation in fifteen cases, and for the treatment of a contralateral lesion in one case. Eight patients had a bilateral pneumothorax.

Sixty-four patients had negative sputum six months after collapse was effective. Five patients treated by pneumothorax were transferred to other Sanatoria shortly after pneumothorax was established, and though collapse was selective the sputum still continued to contain tubercle bacilli. Three patients had sputum negative to direct smear but positive on culture, and four were positive on direct smear. All except one of these are still in hospital.

### Complications

Persistent clear pleural effusion (T.B. negative) ... ..	5
Persistent clear pleural (culture positive) ... ..	5
Empyema ... ..	8
Broncho-pleural fistula and empyema	2

In six of the empyema cases the pneumothorax was maintained with fluid stationary and sputum negative on discharge.

### Thoracoplasty.

This was undertaken on 38 patients, in five of whom it was for the treatment of empyema. Three of the latter were discharged apparently cured with no sinus or sputum; a fourth, who had a broncho-pleural fistula, has still a small drainage tube. The fifth died from lardaceous disease nine months after operation.

Twenty patients have been discharged with negative sputum and fit for work, eleven are ambulant but not working and six are still in bed. Nine patients are still T.B. positive, five on culture only.

### III. X-RAY DEPARTMENT.

E. W. Groves, Radiographer.

The outstanding event of the year was the completion in August of the scheme for enlargement and re-equipment of the department, initiated in 1942.

The four-valve rectifier unit and all accessories, including a tomography attachment, were supplied by Messrs. A. E. Dean & Co., and installed under the supervision of Mr. C. Morgan Davies, M.I.E.E., who was also responsible for the complete planning of the new department.

Not the least of the new facilities is the existence in a separate room of the original plant, modified for fluoroscopy only; this enables screening and radiography to be carried out simultaneously during peak periods of work.

The department would like to record its thanks to Dr. Peter Kerley and Dr. A. E. Barclay, Honorary Radiologists to the Settlement, for their continued interest and advice.

To Dr. Kerley we are particularly indebted for his kindness in obtaining for us on long-term loan, a Phillips Mobile Diagnostic Unit, which makes possible the radiography in the wards of patients too ill to be moved to the main department.

The figures again show an increase in the work done, and categories of patients examined.

It has been found impracticable to continue to record the number of fluoroscopic examinations, and the figure given in previous reports has therefore been omitted.

#### Bernard Baron Hospital

X-ray photographs	...	...	4,996
Electro-cardiograms	...	...	56
<i>Analysis of films taken</i>			
Chests	...	...	4,296
Bronchograms	...	...	16
Pyelograms	...	...	39
Tomograms	...	...	53
Barium Meals and Enemas	...	...	51
Bones and Joints	...	...	447
Obstetric...	...	...	5
Dental	...	...	59
Nasal Sinuses	...	...	22
Other types	...	...	8

#### Analysis of categories of patients X-rayed

In-Patients	...	...	2,045
Adult Villagers	...	...	790
Children of school age normally resident in the Settlement	...	...	144
Hospital special and general staff	...	...	369
Patients referred by Hunts. C.C. and local practitioners	...	...	404
Private Patients	...	...	56
Visitors	...	...	71
Papworth Industries Personnel	...	...	716
Vaughan X-ray Dept., Nelson-Langermann Hospital, 638 films, all of in-patients.			

### IV. OUT-PATIENT DEPARTMENT

The Out-Patient Department functions in the Bernhard Baron Memorial Hospital for Men, where there is a surgery, dispensary, waiting-room, and A.P. refill room. It is adjacent to the Physiotherapy treatment room, the dental clinic and the X-ray department and serves as a filter through which cases are directed to the specialist clinics. Morning and evening surgeries are held for the treatment of minor casualties and complaints, and are attended by all ambulant patients and residents of the village.

#### Daily Attendances

Morning	...	...	4,121
Evening	...	...	2,185
New Cases	...	...	1,164
A.P. Refills	...	...	2,735

#### Dental Clinic.

W. Baird Grandison, L.D.S., R.C.S. (Edin.)  
Hon. Dental Surgeon.

The dental clinic now operates for one whole day in each week, and the year's figures show a considerable increase in the work done, the number of attendances being almost 50% greater.

#### Number of—

Sessions	...	...	101
Attendances	...	...	1,315
Fillings	...	...	483
Extractions	...	...	574
Scalings	...	...	177
Teeth treated with Nitrate of Silver and Engenol	...	...	99
Cauterizations, etc.	...	...	101
Dentures supplied	...	...	81
„ repaired	...	...	54
Other operations	...	...	239

The following paper was published in the British Dental Journal (Vol. 76, 178-179. 6-4-44) : "Precautions in the Dental Treat-

ment of Tuberculous Patients," by D. Barron Cruickshank, L.R.C.P. & S., L.D.S., D.P.H., Research Dept., and W. Baird Grandison, L.D.S., R.C.S.

### Orthopaedic Clinic

R. Weeden Butler, M. Ch., M.D., F.R.C.S.  
Hon. Orthopaedic Surgeon.

We are extremely fortunate in being able to call on the services of Mr. Weeden Butler, who has continued his monthly visits to see our orthopaedic cases. His advice has been of the utmost value in the treatment of these cases, whose condition is almost always complicated by a pulmonary or other lesion. Mr. Butler has been most kind in arranging for the admission of those cases needing specialized treatment to the Orthopaedic wards at the Leys Annexe. In all 180 consultations were held, and 87 patients treated.

### Physio-Therapy Clinic.

Miss C.M. Willis, C.S.P.

This clinic opens twice weekly and the need for the work is shown in the increased number of attendances, 2,587, which is nearly 700 more than in 1943. The treatments given were as follows:

	Patients treated.		
Heat treatments ...	...	...	37
Ultra-violet light ...	...	...	22
Massage ...	...	...	45
Faradism ...	...	...	16
General remedial exercises ...	...	...	10
Exercises, before, during and after thoracoplasty ...	...	...	44

Miss Willis's work with thoracoplasty cases is most helpful in enabling patients to obtain the utmost benefit from their treatment. Miss Willis also attends Mr. Butler's clinic and is of the greatest assistance in helping to carry out the prescribed treatments.

### Psychological Clinic

H. Banister, M.Sc., Ph.D., Hon. Psychologist

The psychological clinic has continued its service throughout the year with a certain amount of success.

Twenty-seven patients have received treatment in seventy-eight therapeutic periods. Some patients have not improved as much as one could wish, but the majority have benefited considerably from their treatment and are experiencing a corresponding increase in their happiness, efficiency and general well-being.

### Ophthalmic Clinic.

W.G. Watson, M.B., Ch.B. D.O.M.S.,  
Hon. Ophthalmic Surgeon

This clinic continues to function in a satisfactory manner, thanks to the efforts of Dr. Watson, who attends at Papworth when required, and also sees patients in Cambridge. The scheme of the National Ophthalmic Treatment Board is of great assistance to our patients.

### General Clinics.

We are much indebted to the following members of our Honorary Staff, who are good enough to see our patients in Cambridge and also visit Papworth when required: Dr. F. B. Parsons, Dr. C. H. Whittle, Mr. Oswald Lloyd, and Mr. A. S. H. Walford.

Also to the following members of the staff of Addenbrooke's Hospital for their kindness in seeing our patients: Mr. Ghey, Mr. Vernon Pennell and Mr. Hamblen-Thomas.

### SIMS WOODHEAD MEMORIAL LABORATORY

Pathological, Physiological and Rehabilitation Sections

E. M. Brieger, M.D.

### Experimental Pathology.

Reference has been made in previous Annual Reports to research work carried out in this department, introducing intra-amniotic infection as a means of inoculation and cross testing avian and human type tubercle bacilli in amnion fluid of susceptible and resistant hosts.

Evidence was forthcoming in these experiments of a mode of reproduction hitherto not yet studied, with the tubercle bacillus undergoing structural changes, which called for further exploration. These preliminary observations have been made the starting point for a research programme executed jointly by the Papworth Pathological Department and the Strangeways Research Laboratory, Cambridge, with Dr. Honor Fell, Director of this laboratory, as an active partner in this work. It is due to her active support and sympathetic response that in the past year the scope of the research has been considerably extended. An efficient

team is now at work, including Dr. Robinow of St. Bartholomew's Hospital, an expert in bacteriological cytology, ready to cope with the controversial problem of the type and mechanism of reproduction of the tubercle bacillus with a new technique and by a new route of approach.

The research programme is roughly divided into four sections (1) Warmstage and cytological observations on the initial development of tubercle bacilli in a variety of fluid and solid media ; (2) Warmstage and cytological observations on the mode of reproduction and the behaviour of the bacilli in various tissues of different species under various conditions ; (3) Warmstage and cytological study of the structures observed in intra-amniotic infection and now being induced in vitro ; (4) A study of the processes taking place in intro-amniotic infection compared with those in artificial media and tissue culture.

From this main line of research, however, many side-lines are branching off and are being followed up as far as the facilities granted for this research allow.

The first results of this research are being published in two papers by Brieger and Fell in the *Journal of Hygiene*.

### Physiology.

The technical side of this work has always been handled by the writer himself, and it has been only possible to treat a limited number of persons.

The Unit established at Papworth since 1935 with the assistance of a grant from the Medical Research Council, is well equipped for this purpose. Modern spiographic methods are widely applied to record respiratory function and oxygen requirements in rest and during measured work. But preference is given to the Gas Analysis method making the widest use of Douglas bags. This is a comparatively new line of clinical research and applied physiology. The work follows a recognized technique now almost standardized, based on the well-known research work of Sir Joseph Barcroft, Prof. A. V. Hill, and the late Prof. J. S. Haldane, and perfected during the last decade at various centres.

The aim of this department has been to apply on a larger scale a technique which has been devised after many years of research, to enable the Medical Officer to give a considered opinion on the working capacity of an ex-patient in terms of his employability

on the labour market. We refer in this connection to the employability chart published in the last annual report, which has proved very useful and is now an integral part of our reports.

All the patients starting work or changing their working status have passed through this laboratory. The testing at three-monthly intervals, however, could not be fitted in. When the plans for the rebuilding of this department materialize, we hope to achieve a higher standard of efficiency.

### Children's Survey.

The 25 years' Survey of the "Papworth Families" has now been published in book form—introduced by a foreword by Sir Arthur MacNalty, Chairman of the Research Committee, and including a preface by Dr. L. B. Stott.

I would like to take this opportunity of emphasizing the fact that Dr. Stott, who was the originator of the Children's Clinic in Papworth, has made this survey possible by recording all the major events in the lives of the children of Papworth. The many others who have contributed to the success of the book, which has been given a very favourable reception, will find my appreciations in the acknowledgments.

### Bacteriological and Bio-Chemical Sections

D. Barron Cruickshank, L.R.C.P. & S. (Edin.),  
L.D.S., (Edin.), D.P.H. (Camb.)

### Zinc Experiments.

Most unfortunately, owing to a combination of circumstances, experimental work in this field had to be temporarily suspended early in the year. This is all the more disappointing as (a) the greatly improved method of estimation was running smoothly ; (b) a repetition of some earlier experiments confirmed the normal population dichotomy in terms of zinc diathesis ; (c) a correlation of the zinc levels in the ectodermal and mesodermal tissues of the cumulative sets of data revealed further evidence of this dichotomy, the contours of the correlation surface departing characteristically from the orthodox ellipse. This latter observation allows classification of the dichotomy in more general terms than previously possible and for the first time gives evidence that a group characterized by all the known zinc attributes of the tuberculous also exists in the normal population ; (d) there is also the suggestion

of a third group, but a greater number of cases must be examined before this point can be fully investigated.

One excellent advance we have to record is that through the kind co-operation of Professor Kennaway the specimens necessary for investigating the zinc levels of cancer subjects, have, after a period of three years, now been collected. The examination of this material should prove doubly interesting, firstly in relation to cancer *per se*, and secondly in relation to the abnormalities of the correlation surface mentioned above.

So despite somewhat adverse conditions definite progress is being made.

### Laboratory Extensions.

Undoubtedly the most welcome progress we have to record is that the building of the extension to the Sims Woodhead Memorial Laboratory is now well under way. The difficulties of obtaining a licence, though considerable, have been small in comparison with those of building, and the Industries have to be complimented on the magnificent way in which they have overcome numerous apparently insuperable obstacles. Naturally it will be some time before we are in full occupation, and the equipping of the laboratory is itself presenting many problems. But the fact that this urgently needed additional working space will be available soon allows one to contemplate with greater equanimity the problem of organizing the increasing responsibilities of this laboratory.

#### Medical.

Urine	...	...	...	1,028
Quantitative Sugar	...	...	...	125
Histidine	...	...	...	14
Special Urine	...	...	...	19
Blood Sugar	...	...	...	38
Blood Urea	...	...	...	6
Other Blood	...	...	...	41
C.S.F.	...	...	...	1
Faeces	...	...	...	12
Food and Drugs	...	...	...	5
Other	...	...	...	15

#### General.

Zinc Analysis	...	...	...	282
Industrial	...	...	...	20
Water Hardness	...	...	...	541
Other Water	...	...	...	4
Milk (Phosphatase)	...	...	...	321
Other Milk	...	...	...	4
Other Chemical	...	...	...	48

#### Bacteriology, etc.

Sputum	...	...	...	3,282
„ H.C.C.	...	...	...	59
Sputum Cultures (T.B.)	...	...	...	463
Cultures	...	...	...	1,910
Microscopical Preparations	...	...	...	2,323
Kahn Reactions (also R. & E.)	...	...	...	21
Widal	...	...	...	5
Animal Inoculations	...	...	...	35
Autogenous Vaccines	...	...	...	1
Blood Counts	...	...	...	119

### Other Research Activities.

Various other pieces of work have been completed, e.g., Streptothrix Infection of the Hand; Sedimentation Rate as determined by Time Plot; Bilinoxaluria in Infective Hepatitis; Report on Sero-Calcin as a prophylactic for common cold; the Dental Treatment of the Tuberculous (with W. B. Grandison); Observations on Multiple Cultures in sputum examination; etc.

The Study on Regional Influences in Cancer and Tuberculosis has also been advanced.

## VI. THE VILLAGE

R. B. Murphy, M.B., Ch.B., B.O.A.

P. Nickolls, S.R.N.,

Industrial and District Sister.

There is no lack of appreciation of the services rendered by our staff in caring for the health of the village, and a ready co-operation is shown by all to ensure that the freedom from tuberculosis so far enjoyed by the children born at Papworth shall continue. The weekly clinic for mothers and children is well attended and every advantage is taken of the facilities provided.

During 1944 there were 18 notifiable cases of chicken-pox amongst the children, but only one each of scarlet fever and whooping cough, and three of measles. There were 11 births in the village, and 4 deaths, in adults, two from tuberculosis and two from other causes.

The following visits were paid :—

Child and Infant welfare	...	...	...	265
Ante-natal	...	...	...	59
Surgical	...	...	...	402
General nursing	...	...	...	1,407
Casual	...	...	...	375
				<hr/> 2,508

## VII. PAPWORTH INDUSTRIES

*B. Tallyn, General Manager*

1944, like so many of its predecessors, was one of steady purpose and gradual progress, and at its end it was found that a new high level of production had been attained.

At the urgent request of high officials of H.M. Government, our range of products was extended to include items requiring a high degree of skill and precision. To this stimulus all our people responded magnificently and with great success. Much experience which will be of inestimable value to us in the future was gained, and again it has been proved that the disabled man, given the right conditions, can not only hold his own in competition with more fortunate contemporaries, but rejoin the ranks of the production side of the community.

During the year, 23 patients, 17 male and 6 female, were settled into permanent occupation and residence. Included amongst these was a bath-chair spinal case where the invalid has had gross deformity from birth. A special tribute from the Trade Union concerned was received when this man was approved for settlement on bookbinding work.

The re-building of the large assembly bay of the Joinery and Aircraft Section, which was so disastrously destroyed by fire in March of the previous year, was completed early in the year. The new bay, of lofty and airy proportions, is provided with up-to-date spraying and finishing rooms which will enable the department to meet on better terms the demands of post-war production.

During 1944 also we brought into operation a new and highly efficient addition to our Central Power House, a super-economic Lancashire-type boiler. This has reduced the very great strain which, particularly during the war, was placed on a seriously over-worked heating system. The Committee's action in approving the strong recommendation of the Management in this matter has been abundantly rewarded in the provision of more comfortable and healthier working conditions in this group of factories. Further additional equipment has been purchased as licensing has allowed, to maintain and improve the high standard of our work. It has been our constant endeavour to devise means of reducing wherever possible the physical effort required of our disabled personnel. This aim, which Sir Pendrill Varrier-Jones always im-

pressed upon the Management, cannot be too greatly stressed.

**PENSION SCHEME.**—In pursuance of the Management's desire to relieve our people of financial anxiety as far as possible, and bearing in mind that an increasing number of settlers have been so successfully rehabilitated that the prospect of retirement in old age must be considered, exploratory work was carried out to see if it were possible to cover these people by a suitable Pension Scheme. The Management has been greatly encouraged by the Committee and has had the very valuable advice of a small sub-committee appointed to go into this matter.

To give some idea of the industrial effort in the year, it may be of interest to record that over 500,000 units of electricity, and over 1,000 tons of fuel were consumed.

In conclusion, I would like to place on record the greatest appreciation of the Management to the staff and personnel of the Industries for their loyal co-operation and goodwill which alone are responsible for another good year.

## VIII. THE SOCIAL LIFE

"There's always something 'on' in Papworth." That is a statement often made by visitors to the village, and 1944 has not seen any slackening off in the efforts of the people of Papworth to provide a full social life.

In addition to the weekly cinema shows and the fortnightly Ensa concerts in the Pendragon Theatre, there has been a succession of dances and whist drives and other functions, in aid of various funds, particularly the "Comforts for the Forces" Fund, which now has over 60 young Service men and women, children of the settlers, on its books.

For the patients in hospital and unable to attend performances in the Pendragon Theatre, ward film shows have been arranged, albeit sadly handicapped by lack of a suitable sound-on-film apparatus. In addition, wherever possible, concerts are relayed from the Pendragon Theatre to the wards.

Two very successful shows of flowers, vegetables, and produce were organized in July and September by the Horticultural Society, and proved how very great is the widespread interest shown by the villagers in what is perhaps the best of all outdoor activities. The Papworth branch of the Workers' Educational Association ran a series of lectures during the winter months

on "Social Security" and music, which proved as popular as ever, besides arranging various other single lectures on matters of topical interest.

The 23rd edition of the Papworth Annual, instituted by Miss Borne, was published as usual in October, and provides interesting accounts in fuller measure than is possible here of the many sides of the social life at Papworth.

The Papworth War Savings Committee, continuing its good work, organized a "Salute the Soldier Week," and during a strenuous seven days' effort raised the sum of £11,700, handsomely beating all its previous efforts.

We have to thank many friends who have helped to provide entertainment in our

Theatre, particularly the following :

The People's Theatre, Cambridge : Two plays—"Painted Sparrows" and "Murder without Crime."


The Cambridge War Factories : Pantomime—"Aladdin."

The Letchworth and District Orchestral Society : Two Orchestral Concerts.

The Welfare Hut has been much in demand by various clubs and organizations for committee meetings, and there is obvious need for a community centre with provision for such meetings, rooms for music practice and lectures, a games room, a central library, and some form of cafeteria which is open in the evenings and will serve as a common meeting place for our people.

R. R. TRAIL

*Hon. Medical Director.*

A circular library stamp from the London School of Hygiene and Tropical Medicine. The text "LONDON SCHOOL OF HYGIENE" is curved along the top inner edge, and "AND TROPICAL MEDICINE" is curved along the bottom inner edge. Two small stars are positioned on the left and right sides of the circle. In the center, the word "LIBRARY" is printed above the date "10 FEB 1949".